



EXECUTIVE SUMMARY



The Diablo Canyon Rural Planning Area (RPA) was established by the Coconino County Board of Supervisors at the request of the Bar T Bar and Flying M Ranches whose grazing leases and allotments are incorporated into the plan area. A third property owner, Bar T Bar LLLP, also joined in the request representing Moqui Ranch and the Meteor Crater RV Park. While the ranchers' primary objective is to maintain the historic ranching operations, they wanted to pursue possible alternatives to supplement the economically cyclical nature of ranching operations and also help offset the costs of various range improvements. Although many of the ranches throughout Arizona, and Coconino County in particular, have been sold for residential development, it is a shared goal of both the ranchers and the County to be proactive in planning for a future of the private lands within this plan area to ensure they do not meet the same fate. Another vital participant in the process was the Diablo Trust, a local collaborative of the two ranching families, environmentalists, land managers, NAU researchers, scientists, and other interested members of the public. Common goals of the landowners, the County, the Diablo Trust, and others who participated in this plan process were to assist the ranchers in identifying possible economic development opportunities while meeting the values of maintaining historic ranching operations, open space and healthy ecosystems the lands provide.

Goal Statement

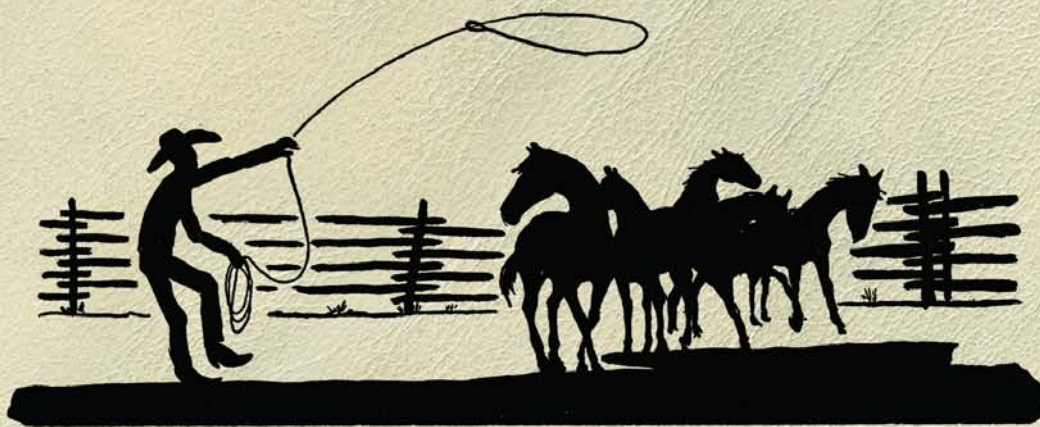
To create a range of economic opportunities in support of private landholders and traditional uses while preserving open spaces for future generations.

Vision Statement

The Diablo Canyon RPA serves as a model approach for the continuation of traditional working ranches as long-term, economically-viable enterprises while maintaining unfragmented landscapes and restoring native ecosystems. The RPA successfully integrates economy, ecology, and community by pursuing a range of economic opportunities necessary to support and maintain the viability of ranching while recognizing the fundamental importance of the health of the land and the support of the broader community.

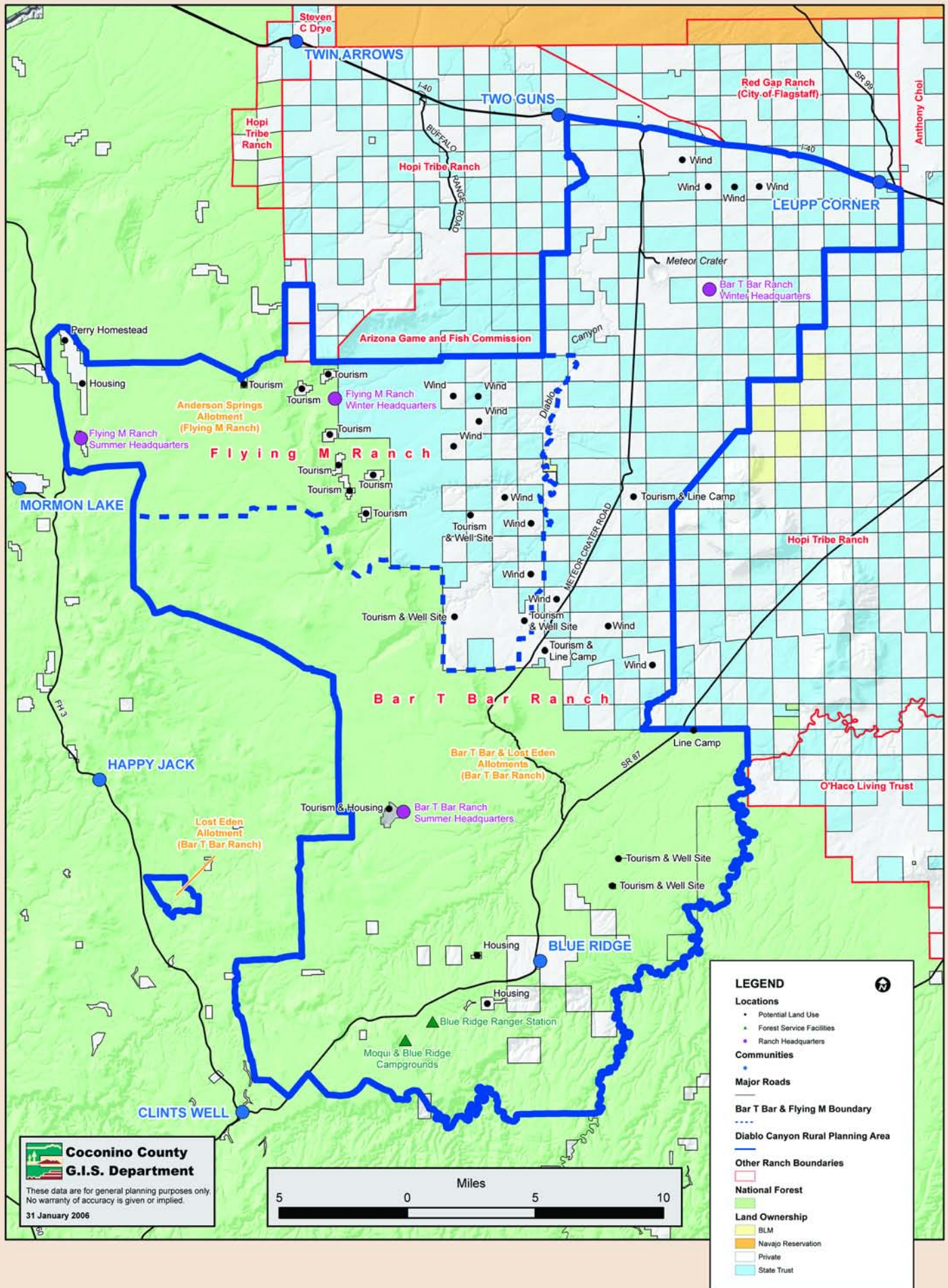
Desired Outcomes

The consensus of the planning committee was that the ultimate desired future of the land within the Diablo Canyon RPA is the maintenance of the historic ranch and grazing operations and open space qualities that the landowners have strived to maintain through good stewardship. However, the economic reality is that ranching is subject to issues beyond the control of the ranchers, from natural situations such as drought to regulatory issues impacting the viability of their operations. With this in mind, the desired outcome of the planning process has been to identify alternatives for the landowners should they find a need or desire to pursue additional economic development on their land. The intent is that the alternatives examined and supported by this plan are those which would be viable for the landowners while meeting the goals of maintaining the historic character, healthy ecosystem, and open space values identified as priorities in the *Coconino County Comprehensive Plan*.



INTRODUCTION

Diablo Canyon Rural Planning Area



In the spring of 2003 the owners of the Flying M and Bar T Bar Ranches, along with the Bar T Bar LLLP petitioned the Coconino County Board of Supervisors to form the Diablo Canyon Rural Planning Area. In response, the Board initiated a public planning process to develop Arizona's first "rural planning area plan" for the two ranches that includes 426,000 acres of private, state and federal lands.

Rural Planning Areas

Arizona state law (ARS§11.806.D) allows for the establishment of a "rural planning area" (RPA) in order to "prepare a plan that emphasizes voluntary, nonregulatory incentives for accommodating the continuation of traditional rural and agricultural enterprises."

The unique nature of the lands and livelihoods within the Diablo Canyon RPA requires a specialized planning process. Items of consideration for the RPA include:

- Environmental stewardship and landscape and open space protection;
- Growth, development, and the viability of the working ranch; and
- Changes to the character, culture, and lifestyle of the ranching industry.

Purpose of Plan

The intent of this plan is to provide direction and guidance for future economic development proposals that the ranchers may pursue either on their own, in cooperation with one another or through outside resources, in order to diversify and promote sustainability of the ranching operations. The plan does not dictate, but rather identifies options and evaluates alternatives identified by the planning committee and the ranch owners.

Planning Area

The planning area is located southeast of Flagstaff bordered by I-40 on the north, Lake Mary Road (FH 3) on the west near Mormon Lake, and extending south to Highway 87 in the Blue Ridge area. The area consists of 426,000 acres of private, state, and federal lands. Approximately 100,000 acres are private ranchlands, and an equal or greater amount is state land on which the ranches hold grazing leases. The remainder includes Forest Service grazing allotments on the Coconino National Forest. Although there are other private lands in the planning area, such as the residential development in the Blue Ridge area, they are not addressed through this process, nor will the plan apply to them. They are included solely because they are within the two ranches' Forest Service grazing areas.

Planning Process and Public Participation

The planning team was comprised of the ranch owners and their families, federal and state land management representatives, interested members of the Diablo Trust, and county planning staff. The initial kick-off was a goal setting meeting at Mormon Lake Lodge in July, 2003. This was followed by a tour of part of the RPA lands and a retreat at the Flying M headquarters in September 2003. The facilitated retreat served as a brainstorming session to identify the purpose, goal, and vision of the RPA process. For the next year and a half the committee met on a regular basis about once a month, typically tied to the Diablo Trust monthly meetings. A



Jack Metzger.

M

The collaborative
allows us to work
within a community,
and the community
to work with us.

Jack Metzger, Flying M Ranch

-T-

total of 15 meetings were held. In addition to sit-down meetings, the process involved an air tour over the planning area, and several field trips to both ranches to view various stewardship and monitoring projects and other ranching operations. The air tour was sponsored by LightHawk, a nonprofit conservation flight organization. The RPA meetings were noticed in the Diablo Trust newsletters and via the Trust's email list with a distribution of several hundred.



Diablo Trust "Day on the Land" field trip on Anderson Mesa.

DIABLO TRUST MISSION

To sustain healthy land resources and open space of the Diablo Trust area through education and active involvement of the broader community in maintaining ranches as long-term, economically viable land stewardship enterprises.

Relationship Between RPA and Diablo Trust

The Diablo Trust was formed in 1993 by the Metzger family, owners of the Flying M Ranch, and the Prosser family, owners of the Bar T Bar Ranch, to create a collaborative process for developing ideas to assist the ranches in the protection of open spaces and healthy habitats. The Trust is a 501(c)(3) nonprofit organization. There is not a defined membership structure. Any interested person can sign up to be on the mailing list and receive newsletters and announcements of Trust activities. The Trust's motto is "Learning from the land and sharing our knowledge... So there will always be a West."

The Diablo Trust was a primary participant in the plan development and will be involved in the implementation as well. One of the initial goals in the establishment of the plan process was to facilitate a relationship between the Trust and the ranches that would bring funding to the Trust in their collaborative endeavors for improving the health of the ranchlands. The ranchers rely on the resources members of the Trust bring to the table, and would like to continue the mutually beneficial relationship. Likewise, members of the Trust value the historic ranching operations and the open space benefits and the commitment of the two ranches in maintaining and improving the health of the land.

In 1998 the Diablo Trust was designated a National Partnership for Reinventing Government Laboratory by the federal government. The significance of this designation is that all federal agencies are to cooperate with the Diablo Trust "within the constraints of statute." The designation was given to the Diablo Trust to

“Demonstrate innovative approaches to restore and maintain the natural processes that create and protect a healthy, unfragmented landscape to support a diverse flourishing community of human, plant and animal life in the Diablo Trust land area.”

The Trust currently relies on a core group of individuals for operation and research, and without membership fees or dues it relies on contributions to fund their programs. Involvement by more Trust participants could be beneficial in implementing many of the economic development alternatives outlined in this plan. Volunteering time and resources for marketing is one example where the general Trust membership could get involved in plan implementation.

Relationship Between RPA and County Comprehensive Plan

The *Coconino County Comprehensive Plan* adopted by the Board of Supervisors in September 2003 includes a strong conservation focus and promotes conservation-based planning. The plan recognizes that ranchers are the stewards of large tracts of private land and that the protection of working ranches is important to preserve habitat and protect environmental resources and open spaces. The *Diablo Canyon RPA* will be adopted as an amendment to the *Comprehensive Plan* in the same manner as community area plans. The vision and ideas put forth in the RPA are consistent with the vision, goals and policies of the *Comprehensive Plan*.

Implementation Process

The purpose of this plan is to establish support for the economic alternatives presented so that implementation by the land owners is more easily facilitated through the county process. Throughout the plan development it was the County’s responsibility to identify regulatory issues that could be problematic in pursuing certain alternatives. Staff also ensured that this plan is consistent with the *County’s* responsibility to identify regulatory issues that could be problematic in pursuing certain alternatives. Staff also ensured that this plan is consistent with the *Comprehensive Plan*. The *County Zoning Ordinance* and *Subdivision Ordinance* are the primary tools for implementing county plans. Both ordinances include requirements that the Planning and Zoning Commission and Board of Supervisors must make certain findings of fact in order to approve zone changes, subdivisions, and conditional use permits. This plan will be used for assessing development proposals through the review and approval process. Adoption of the plan by the County should provide some level of comfort that the ideas identified in the plan have a higher degree of assurance of support from the County. Any future development of the land within the planning area must be found to be in compliance with both the RPA and the *County Comprehensive Plan*.

Most development approvals are accompanied by conditions addressing certain permit requirements, site improvements, and property development standards. The conditions of approval further serve as a mechanism to ensure compliance with the policies of both the RPA and *County Comprehensive Plan*.

Plan Amendment Process

The plan may be amended as needed due to changing conditions or unanticipated issues. Plan amendments are initiated by an affected party, which in this case would be limited to the landowners and the Diablo Trust. Amendments would be considered by the Planning and Zoning Commission and County Board of Supervisors through a public hearing process.



(top) Cattle pen on the Flying M.

(above) Men and horses on the Bar T Bar.

Regulatory Issues/Land Management

Given the nature of the lands and current use of lands within the planning area, there are a number of factors that are outside the scope of this plan. In particular, the ranches maintain grazing leases on state lands which are owned and managed by the State Land Department, and have permits for grazing allotments on the national forest lands which are owned by the federal government and managed by the Coconino National Forest. Furthermore, agencies such as the Arizona Game and Fish Department oversee activity on some of the lands in the study area. These agencies were participants in the planning process, but are not responsible for adopting the plan. County jurisdiction does not extend to national forest land, but does apply to any development on state trust land.

Culture and Economics of Ranching

The culture of ranching means different things to different people, but there is no escaping the integral relationship between ranching and the West. To many, it is the romanticized West that is described in stories by Zane Grey and Louis L'Amour, and portrayed in Hollywood movies with stars such as Gary Cooper and John Wayne. To others, the culture of ranching is a lifestyle that they were born into, with land that has been in the family for generations. The earlier generation of ranchers could not anticipate the jeopardy these family ranches would find themselves in, which their descendants are dealing with now. In some cases, there are new ranchers—those folks who have had enough of the city life and have chosen to pursue something totally different—something for which no urban background could ever prepare them. While these new ranchers come with a different perspective than ranchers who were born into the life, they no doubt share many of the same values such as working on the land, preserving the open space, and the overall lifestyle.

There is an historic relationship between ranchers and public lands. With westward expansion in the 1800s lands became available for a variety of uses, with ranching being one of the biggest. Federal control evolved through Congressional Acts, with some of the more significant ones being the Homestead Act of 1862, the Forest Homestead Act of 1906, the Stock-Raising Homestead act of 1916, and the Taylor Grazing Act of 1934, which established the permitting process for grazing allotments on national forest land.

As the West grew and pressures on public lands grew, new considerations came into play. Now, ranchers must concern themselves not only with range improvements, but also with a myriad of permitting, review and approval processes, a whole host of new regulations, and in many cases public scrutiny. Furthermore, as the West has grown, ranchers have found their operations being encroached upon by sprawling residential development. Along with this growth comes competition for resources, such as water, and concerns with the interface between grazing cattle and recreation users, and neighboring residences. Ranching in the 21st century is a lot different than in the 19th.

The issues and regulations that ranchers must currently deal with are not only time-consuming, but can be costly as well. Dealing with the increasing complexity of the public land permitting process and with more stringent environmental laws has a significant financial impact on the rancher.



The underlying principle that built the ranches as profitable businesses is the capacity of grazing available to them. The economies of scale, the grazing system, and land tenures are the basis that defines these operations. The grazing system in place relies on the grazing of national forest lands during the growing season (summer). All of the state and private lands are rested during the growing season. Any reduction of use on the national forest lands has a big effect on the whole picture. If a rancher were to lose the grazing on national forest lands, it would reduce their capacity by 2/3. Each ranch would no longer be economical since they would have to use state and private lands during the growing season, leaving only 1/3 of the grazing capacity available. The uncertainty created by politics, regulations, and management of the national forest lands is the real threat to the ranches. No amount of cost cutting or revenue from value-added product revenue could offset a 2/3 reduction in cattle numbers. This is what drives the 40-acre subdivision explosion that has been seen in the West.

There are other factors which affect the economy of ranching. The historic economic cycle of ranching is a matter of supply and demand. When there is a lot of beef on the market, prices go down and ranchers reduce their herd. As a result, less beef is on the market and prices go back up. The current cyclical nature of the ranching economy is addressed in an article by Bill McDonald, Executive Director of the Malpai Borderlands Group and published in the Quivira Coalition newsletter. The article, titled "The Economics of Ranching in 2002" describes the "economic squeeze" that American cattle ranchers have been experiencing, particularly in the past 10 years. He tracks the value in a 450 lb. steer calf which in 1981 brought an average of 71 cents per pound, in 1991 \$1.06/per pound, and in 2001 \$1.11, a five cent increase in 10 years. McDonald points out the obvious that while the price per pound over that 10 year period was relatively level, the costs of producing the cattle was not. The cost of living increased substantially for ranchers, as well as the rest of the population.

McDonald explains that the rancher, feeder, and processor are all part of the cycle. The nature of this cycle is that one segment is typically making a profit when the other two aren't. This is due to retailers trying to keep the market cost relatively stable. McDonald points to certain changes that have occurred which are at least partially responsible for the change in economics. McDonald points to the processing industry which is dominated by four conglomerates which process 82% of the meat, while neither the feedlots nor cow/calf operators are pursuing consolidation. He suggests that there is more control in consolidation and alliances. It seems that the economic picture McDonald describes is not conducive to the type of family operation that has been typical of Western cattle ranches.

In order to preserve family ranching there has been growing interest in pursuing non-traditional markets. Niche markets for grass-fed, organic, and local products are an area of increasing promise, but like everything else require time, energy, and expense to make them viable alternatives.

The bottom line seems to be that the ranching culture which was once so romanticized, and one where the rancher was able to focus on the business of ranching, has gone with the times. Today ranchers, particularly those that don't want to sell their land for development, end up spending much more time looking at the bigger picture. Today ranchers must keep track not only of changes in the



Early days on the ranch.



cattle and beef industry, but the regulatory atmosphere and environmental concerns, all while considering other economic opportunities for off-setting the increasing costs of ranching.

History of the Plan Area

The two ranches in the planning area are rich in history. Two excellent sources for providing area history include the 1994 book *A Tale of Two Families: The Tremaines and The Chilsons*, written by Dean Smith; and *Notes on the Land Use History of Anderson Mesa and the Canyon Diablo Plains in the Forest Service Era 1906 to 1940*, compiled and written by Don Neff in 1984 when he worked for the Arizona Game and Fish Department. Wendell Berry's article "Profile of Good Stewardship: The Flying M and the Diablo Trust," provides good background of the transition from early ranching to the present day operations and the collaboration of the two ranches through the formation of the Diablo Trust.

Bar T Bar

The land that comprises the current Bar T Bar Ranch is the product of an almost century-long relationship between two families, the Tremaines originally from Cleveland and the Chilsons of Winslow. It is a testament to the commitment and desire to keep the ranch in the family, not to mention some very profitable business enterprises pursued in addition to the ranch operation. Although the

relationship between the two families didn't begin until 1930, the Chilson family had interests in several ranches as early as 1913 in the Tonto Basin area south of Payson. However, those ranches were subsequently purchased by John Anderson who was a contractor for the Tremaine family business, which at the time was cattle feeding. During the time of the Great Depression, Anderson ended up turning over the deed to the Bar T Bar and another ranch (the AD near Clifton) to Tremaine. Tremaine then sought out Boss Chilson to assist in operating the ranches again.

With most of the Bar T Bar being south of the Hay Lake and Little Springs grazing permit area, the ranch soon pursued acquiring more deeded land and contiguous land, with the goal of eliminating the 70-mile cattle drive between Little Springs and the Tonto Basin. As the move to the north continued they purchased the Pitchfork Ranch from the Babbitt Brothers in 1939. This was the northernmost land they acquired. From the description, the Pitchfork is probably most of the northern portion of the present day Bar T Bar. This included the lands around Meteor Crater. Several years later, in 1941, the families acquired a 199-year lease on the Meteor Crater property, which they still hold today.

Two other significant acquisitions were the Wolfolk allotment, two townships in the area which provided the connection between the summer and winter ranges, and Moqui Ranch, which was purchased in 1946.

Flying M

The Metzger family, which owns and operates the Flying M Ranch, also has their roots in Ohio, with brothers Dick and Harry who filed their first claim on Anderson Mesa in 1914. The current ranch is a combination of a number of historic homesteads which were purchased over the years by the Metzger family. The old homesteads have a history of use ranging from cattle and sheep ranch operations, farming, and even bootlegging. The history described by Don Neff in his manuscript portrays a different picture of the area than exists today. Neff describes the area of Anderson Pass (defined as the area along the eastern slope of Anderson Mesa) as being a "lively community of about 25 families which for a time supported two country schools." The Anderson Pass area includes the area south and east of Padre Canyon to just south of Grapevine Canyon, and includes the present day Flying M ranch winter headquarters. Many of the early settlers have been memorialized with their names attached to natural and manmade features—from open meadows to canyons to stock tanks.

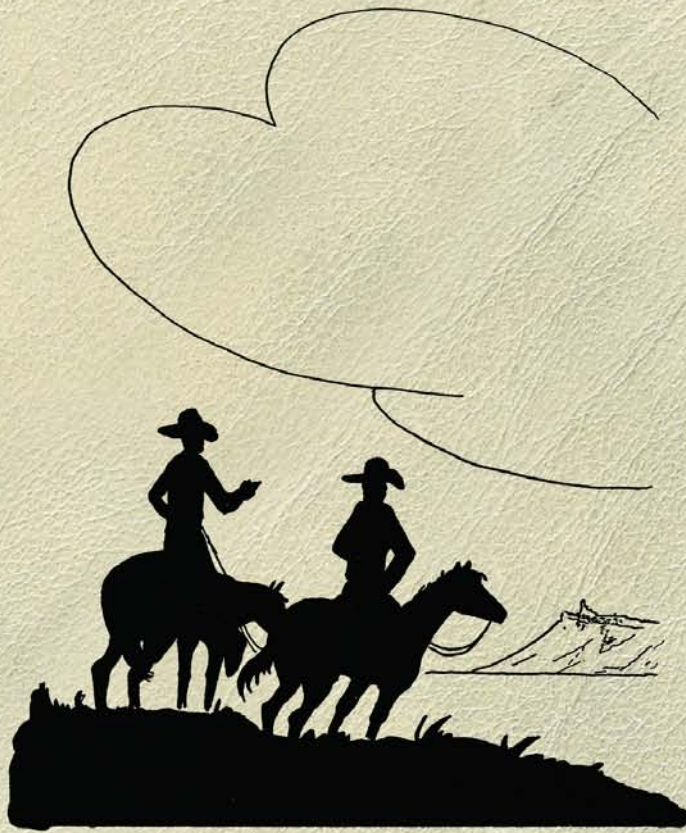
It has been noted that until year-round water was developed by the ranchers, actual grazing (by both livestock and wildlife) was very limited, on Anderson Mesa in particular. Historical accounts suggest that grazing on Anderson Mesa through the late 1930s was never season long, was never dispersed over the whole mesa, and livestock grazing was never uniformly as heavy as may be presumed.

There have certainly been substantial changes over the 100 or so years of active history for this planning area. There have been land exchanges resulting in fewer inholdings and more lands available for development, particularly in the southern part of the area along Highway 87. In the 1980s the development of new subdivisions in the Blue Ridge area began, and it is still going on today. Most of the homes in this area are seasonal residences, although the year-round population is growing as well.



(top) Bill Ogilvie, Bar T Bar foreman from 1946 to 1988.

(above) Herb Metzger (left) and Ernest Chilson at Moqui.



EXISTING CONDITIONS



Diablo Canyon forms the boundary between the Bar T Bar and Flying M ranches.

In considering alternative economic opportunities, the existing conditions are important for identifying resources which could be used—natural, cultural, and historical, for example. Equally important are challenges and limitations presented by the existing conditions.

Ranches

The northern portion of the plan area lying south of I-40 is characteristic of the high desert with magnificent and generally unobstructed views north and east toward the Hopi Mesas and Painted Desert and west toward the San Francisco Peaks. Elevations range from 5010 feet west of Winslow to 7660 feet east of Mormon Lake. This area is bisected by Diablo Canyon, which also serves as the physical and actual barrier between the two ranches. Bar T Bar maintains its primary ranch headquarters in this high desert portion of the RPA.

The only commercial development in the planning area is located at the I-40/Meteor Crater Road interchange. The property to the southwest of the interchange is developed with an RV Park and convenience market with gas sales. Business offices for Meteor Crater Enterprises, which owns and operates the facilities at Meteor Crater, are also located in this area. Meteor Crater itself is located in the planning area, approximately 5 miles south of I-40 and about two miles west of Bar T Bar's ranch headquarters. The Crater is a major tourist attraction for the area and includes a museum, gift shop, and employee housing which are all privately owned and operated.

The best way to educate is through the heart. We know that only through heartfelt community can we bring about protection for our local family ranches.

Trish Jahnke, musician and member of Diablo Trust

Bar T Bar maintains grazing leases on the checkerboard state and private land in this area. Ranches owned by the Hopi Tribe, but not part of their trust land (reservation) bound the planning area to the west and east in this northern portion. The Arizona Game and Fish Department maintains a buffalo ranch in the area south of Two Guns and adjacent to the north/central RPA boundary.

Flying M Ranch winter headquarters are located approximately 12 miles southwest of the Bar T Bar's between Yeager and Anderson Canyons. The summer headquarters for the Flying M are on top of Anderson Mesa on a private inholding known as Ashurst Run. The area on top of Anderson Mesa is on the east side of Forest Highway (FH) 3 near Mormon Lake, and south of Ashurst Lake. Anderson Mesa runs all the way to Highway 87, which bisects the southeastern portion of the planning area near Blue Ridge.

The Blue Ridge area is the most developed and populated of all the private lands within the planning area. It includes several subdivisions—Clear Creek Pines Units 3-9, Starlight Pines, Starlight Pines Ranchettes, Tamarron Pines, Blue Ridge Estates, Mogollon Ranches, and Pine Canyon. Zoning in these areas ranges from one acre to 10 acre minimum parcel size. While these developments are within the RPA boundaries, they are not included or addressed through this plan.

Bar T Bar maintains grazing allotments in this area and has a private inholding known as Moqui just south of Highway 87 where some old cabins in various stages of disrepair still remain. Bar T Bar's summer headquarters are in the general area of Hay Lake, north of Highway 87 and east of FH 3, approximately 14 miles from Happy Jack.

Natural Resources and Environmental Quality

One of the primary focuses of the Diablo Trust in assisting the ranchers has been in addressing many of the natural resource/environmental quality issues related to the ranch operations and their leases and allotments on state and national forest lands. Both ranches have a stalwart history of improving the land in conjunction with their ranching operations. These include a system of water catchments and distribution channels, resting and rotating grazing land, brush and tree removal, range science, and associated research.

In 1999 the Diablo Trust developed the *Diablo Trust Area Range Management Plan and Proposed Action*. The plan identifies six (6) management zones, based on biological diversity of the 426,000 acre plan area. A description, desired landscape description, current conditions, record of management, and proposed management and projects are described for each zone. The projects typically address grazing, vegetation manipulation, fire, fencing, water and watershed, roads, trails, and soil. The Management Plan includes a map of the six zones.

The *Diablo Trust Area Range Management Plan and Proposed Action* was developed as an alternative for the *Environmental Impact Statement for Bar T Bar and Anderson Springs Allotment Management Plan* which affects their grazing permits on the national forest. Natural resource/environmental quality issues addressed through this process include soil health, forage health, antelope population and habitat, waterfowl nesting, and vegetative management. This management plan became the “template and springboard” for the more site specific proposed action alternative included in the Draft Environmental Impact Statement (DEIS) for the *Bar T Bar and Anderson Springs Allotment Management Plan*.



Wildlife on the ranches.
(top) Pronghorn. (middle) Bull elk.
(above) Mule deer.

Historic and Cultural Resources

For many years it was thought that Meteor Crater was the result of volcanic activity. However, after Daniel Moreau Barringer visited the site in 1902 he identified it as being the result of a meteor impact, and after expending much time and money he was able to confirm that discovery. The Barringer family still holds title to the land, but it is operated under a 199-year lease to the Tremaine/Chilson families. The crater is a popular tourist stop for travelers on I-40, as well as scientists and school children who make special trips to view the crater. The crater is over 49,000 years old and substantial in size at 570 feet in depth and with a rim 150 feet above the surrounding open desert. The sandstone remains of an early tourist shop are still visible on the east side of Meteor Crater Road just south of I-40.

The plan area is no doubt rich in archeological history as well. The physical features of the area are characteristic of sites where previous native cultures have lived.

Given the history of ranching and homesteading, there are a number of cabins and line camps throughout the planning area that may have some historical value. For example, in 1948 the old Sparr cabin was moved to the Dick Metzger homestead for Herb and Jane Metzger to live in. This is where the Flying M's current summer headquarters are located.

Public Safety

Due to the remote nature and limited population, there is little in the way of public safety visibility in this area. Given the amount of recreational use on the lands within the planning area, safety is certainly an issue for the ranchers. The ranchers take the responsibility of helping hunters and others who have problems such as flat tires or getting stuck on a muddy road. But concerns are also raised for the safety of the ranch improvements with so many people having access to both their private land and grazing allotments.

With a mix of private, state, and national forest lands, law enforcement activity is handled by different agencies. The county sheriff responds to calls on both state and private lands, while the Forest Service also has law enforcement officers for lands under their control.

Emergency medical service is limited. The closest hospital is in Flagstaff, which maintains airborne evacuation operations. A hospital is available in Winslow. Emergency medical response may also be available through either the Mormon Lake or Blue Ridge Fire District.

Wildfire was a concern in the summer of 2004 with the Jacket Fire on lands adjacent to the RPA. The wildfire was initially left to burn until it began to threaten a regional electric line providing service to the metropolitan Phoenix area. The United States Forest Service oversees fires on the national forest. The Forestry Division of the State Land Department provides fire response on state lands and works with coordinating rural fire districts and federal agencies.

There are fire districts within and adjacent to the RPA, but the ranches are not included in either of them. These are the Blue Ridge Fire District and Mormon Lake Fire District. However, it is possible that they could help in responding to fire and life safety emergencies if called on and their equipment was available.



(top) Trading post ruins on old
Route 66 on the Bar T Bar.
(above) Meteor Crater.



(top and above) Water works
on the Bar T Bar.
(below right) Bar T Bar summer
headquarters at Hay Lake.

Utility Infrastructure

The most elaborate utility infrastructure on the ranches is probably the series of water systems developed over the years by the ranchers to capture and run water through strategic areas of the ranches. The significant water system on the Bar T Bar includes Tremaine Dam and Lake, located in the Hay Lake area, which has been used for irrigating pasture land. The Chilson Ditch project routes water from Soldier Annex Lake through Chavez Pass, to Dog Valley and eventually near Meteor Crater.

There are no naturally occurring lakes on Anderson Mesa and all of the permanent water available for livestock grazing and wildlife are the result of the ranchers' work over the years. These improvements include stock ponds, dams, ditch systems, and pipelines. One account of early water development describes the efforts of Mr. Beasley and Hart Cattle Company in 1901-03 to divert Beasley Draw, now known as Kinnikinick Canyon into "Lake Borne", now known as Kinnikinick Lake. Yeager Lake, Mud Lake, Corner Lake, Breezy Lake, and Ducksnest Lake are examples of stock ponds that were created by building small dams 2-3 feet in height to capture rain, snowmelt, and runoff.

The provision of residential utilities is very limited. The Bar T Bar summer headquarters and the Flying M main headquarters rely on generators for electricity. Electric service is available to the Flying M summer headquarters on Anderson Run and the Bar T Bar winter headquarters near Meteor Crater. Water is available from several on-site wells. A high voltage transmission line traverses a portion of the western part of the RPA carrying electricity from the Navajo Generating Station near Page to the metropolitan Phoenix area. A transcontinental fiber optic line runs across the northern portion of the Bar T Bar property.

Circulation

Given the location of the planning area on the Coconino National Forest, the land is used more by visitors than the ranchers. The amount of traffic generated by these recreationists has great impact on the roads, which receive only minimal maintenance. Most of the roads are either Forest Service system roads, ranch roads, or social roads created by recreation users with ATVs and other off road vehicles.

Paved roads in the RPA include State Route 87, Mormon Lake Road (FH 3), and Meteor Crater Road from the I-40 interchange to Meteor Crater. Meteor Crater Road and Anderson Pass Road are both included in the county road system as farm-to-market roads, with very limited maintenance.

